

In the Claims**The claims are as follows:**

1. (previously presented) A method of depositing material on a substrate comprising:

providing a reactor with a reaction chamber having a first volume;

introducing a first precursor into the reaction chamber at the first chamber volume;

contacting a surface of a substrate in the reaction chamber with the first precursor at the first chamber volume to react with and deposit a first layer on the substrate; and

enlarging the reaction chamber to a second, larger volume and removing undeposited first precursor and any excess reaction product to end reaction of the first precursor with the substrate.

2. (previously presented) The method of claim 1 further including:

reducing the reaction chamber to the first chamber volume;

introducing a second precursor into the reaction chamber at the first chamber volume;

contacting the first layer in the reaction chamber with the second precursor at the first chamber volume to react with and deposit a second layer on the first layer, thereby forming a film; and

enlarging the reaction chamber to the second volume and removing undeposited second precursor and any excess reaction product to end reaction of the second precursor.

3. (original) The method of claim 1 wherein removing undeposited first precursor and any excess reaction product is by purging the reaction chamber at the second volume with a gas.

4. (original) The method of claim 1 wherein removing undeposited first precursor and any excess reaction product is by exposing the reaction chamber at the second volume to a vacuum.

5. (original) The method of claim 1 wherein the reaction chamber includes a pedestal adapted to secure the substrate during the deposition and movable between first and second positions, a first chamber section above the pedestal in the first position defining the first chamber volume, and a second chamber section outside the first chamber section; and wherein the reaction chamber is enlarged to the second, larger volume by moving the pedestal to the second position such that the first and second chamber sections together with the pedestal in the second position define the second chamber volume.

6. (previously presented) The method of claim 1 wherein the second chamber volume is on one or more sides of the pedestal.

7. (previously presented) The method of claim 1 wherein the second chamber volume is below the pedestal.

8. (previously presented) A method of depositing a film on a substrate comprising:
providing a reactor with a reaction chamber having a first volume;
introducing a first precursor into the reaction chamber at the first chamber volume;
contacting a surface of a substrate in the reaction chamber with the first precursor at the first chamber volume to react with and deposit a first layer on the substrate;
enlarging the reaction chamber to a second, larger volume and removing undeposited first precursor and any excess reaction product to end reaction of the first precursor with the substrate;
reducing the reaction chamber to the first chamber volume;
introducing a second precursor into the reaction chamber at the first chamber volume;
contacting the first layer in the reaction chamber with the second precursor at the first chamber volume to react with and deposit a second layer on the first layer, thereby forming a film; and
enlarging the reaction chamber to the second volume and removing undeposited second precursor and any excess reaction product to end reaction of the second precursor.
9. (original) The method of claim 8 wherein the reaction chamber includes a pedestal adapted to secure the substrate during the deposition and movable between first and second positions, a first chamber section above the pedestal in the first position defining the first chamber volume, and a second chamber section outside the

first chamber section; and wherein the reaction chamber is enlarged to the second, larger volume by moving the pedestal to the second position such that the first and second chamber sections together with the pedestal in the second position define the second chamber volume.

10. (previously presented) The method of claim 1 wherein the second chamber volume is on the side of and below the pedestal.

11-19. (cancelled)

20. (previously presented) The method of claim 1 further including providing a perforated plate above the pedestal in the reactor chamber, and diffusing the first precursor through the perforated plate into the reaction chamber.

21. (previously presented) The method of claim 2 further including providing a perforated plate above the pedestal in the reactor chamber, and diffusing the first and second precursors through the perforated plate into the reaction chamber.

22. (previously presented) The method of claim 8 further including providing a perforated plate above the pedestal in the reactor chamber, and diffusing the first and second precursors through the perforated plate into the reaction chamber.